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L10: Entry 1 of 1   File: USPT   Jun 10, 1997

US-PAT-NO: 5638519
DOCUMENT-IDENTIFIER: US 5638519 A

TITLE: Electronic method and system for controlling and tracking information
related to business transactions

DATE-ISSUED: June 10, 1997

INVENTOR-INFORMATION:
NAME   CITY   STATE   ZIP CODE   COUNTRY
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APPL-NO: 08/ 246588   [PALM]
DATE FILED: May 20, 1994

INT-CL: [06] G06 F 13/00

US-CL-ISSUED: 395/228; 395/201
US-CL-CURRENT: 705/28; 705/1

FIELD-OF-SEARCH: 364/401, 364/406, 364/408, 395/201, 395/228

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected   Search ALL   Clear

       PAT-NO   ISSUE-DATE   PATENTEE-NAME   US-CL
☐   2995729   August 1961   Steele
☐   3631993   January 1972   Young
☐   3909604   September 1975   Monna
☐   4340810   July 1982   Glass
☐   4459663   July 1984   Dye
☐   4588881   May 1986   Pejas, et al.
☐   4591705   May 1986   Toudou
☐   4621325   November 1986   Naftzger et al.
☐   4636950   January 1987   Caswell et al.
☐   4672553   June 1987   Goldberg

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☐	4737910	April 1988	Kimbrow	
☐	4783740	November 1988	Ishizawa et al.	
☐	4787037	November 1988	Ootsuka	
☐	4799156	January 1989	Shavit et al.	364/401
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☐	5168445	December 1992	Kawashima et al.	
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FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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156660	March 1922	GB	
1351010	April 1974	GB	
2175566	December 1986	GB	

ART-UNIT: 241

PRIMARY-EXAMINER: Hayes; Gail O.

ASSISTANT-EXAMINER: Yount; Steven

ATTY-AGENT-FIRM: Hoelter; Michael L. Abbruzzese; Salvatore J.

ABSTRACT:

A computer-implemented method for automatically controlling and tracking
information related to business transactions occurring between a provider and a
receiver of goods. The business transactions are tracked via an electronic system
that includes a provider computer, at least one receiver computer and a business
controller in electrical communication with the provider computer and the at least
one receiver computer. The method includes an initiation step, step of receiving
and retrieving the electronic information by the business controller and processing
the electronic information to generate updated electronic information. The
information is stored and rendered mutually accessible to the provider computer and
the at least one receiver computer substantially simultaneously.

6 Claims, 6 Drawing figures

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L10: Entry 1 of 1   File: USPT   Jun 10, 1997

DOCUMENT-IDENTIFIER: US 5638519 A
TITLE: Electronic method and system for controlling and tracking information
related to business transactions

Application Filing Date (1):
19940520

Brief Summary Text (4):
Vendor managed inventory (VMI), as it is commonly called, is a business method
which relates to vendor (referred to interchangeably as "manufacturer", "supplier",
"provider" or "seller"), and customer (referred to interchangeably as "receiver",
"buyer" or "distributor") interaction in an effort to minimize the customer's share
of the distribution cost associated with distributing a supplier's goods. Vendors
that are able to reduce the customer's cost incurred with the purchase and
distribution of the vendors' goods provide an added incentive for the customer to
stock and sell more goods, if not full lines of the vendor's products.

Brief Summary Text (5):
A key feature in any conventional system integrating information relating to
business transactions between a supplier and its customers is the use of a computer
to receive and delegate inventory and invoice information, provided from either the
supplier or the customer, and to generate an automatic electronic purchase order
therefrom. Through various forms of supplier (manufacturer) and customer (receiver)
interaction pursuant to the computer generated purchase order the process for the
distribution of goods may be streamlined.

Brief Summary Text (6):
For example, U.S. Pat. No. 5,168,445 to Kawashima et al. discloses an automated
ordering system for use in a retail shop that is adapted for automatically ordering
frequently sold goods. The Kawashima system enables a stock caretaker, such as a
shop manager, to understand and utilize factors of changing demand for individual
goods in order to assist in the determination of an ideal order amount. The system
then electronically determines and uses the ideal order amount as well as other
electronically stored information, e.g., the status of the particular stock and
factors affecting the stock's storage and use, to electronically determine an order
amount and order the goods to replenish inventory.

Brief Summary Text (9):
In addition to automatically generating purchase orders, vendor managed inventory
systems have attempted to provide users with the ability to streamline the
shipping/receiving process. For example, U.S. Pat. No. 5,038,283 to Caveny
discloses an electronic based shipping method for facilitating efficient
distribution of goods between manufacturer and distributor. The Caveny shipping
method requires the labeling of individual items for shipment with identification
indicia, labeling a shipping container with container identification indicia and
recording in a shipping location computer database the container and identification
indicia and including a list of the items shipped in the container. A container
packing record is electronically generated according thereto.

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Brief Summary Text (10):
The Caveny shipping method electronically transmits the container packing record to
a database that is accessible by a shipping destination computer at the shipping
destination. There, a customer order list of identification indicia identifying
items necessary to fill customer orders, and a list of indicia of containers
received at the shipping destination are recorded in a data base. The shipping
destination computer includes a program to compare the identification indicia of
the items recorded in the container packing record of a received container with the
identification indicia of the items in the customer order. The received container
may thereby be directed to either general inventory or to an area for further
shipping if need be bypassing the need to handle and check each item of the goods.

Detailed Description Text (3):
The present invention envisions a scheme whereby conventional control of business
transaction information, conventional business methods communication related to the
exchange of goods between a manufacturer (provider of goods) and a distributor
(receiver of goods) are redefined for modern business needs. The method and system
of this invention automatically correlates, adjusts and communicates (shares) a
manufacturer's, or other inventory supplier's, and a distributor's, or other
inventory receiver's, electronic business activity and business transaction
information. While this invention will be described relative to transactions taking
place between a manufacturer and the manufacturer's distributor(s), i.e., the
manufacturer's receivers, the invention is not limited to such business
relationships, but may be utilized by any business entities requiring electronic
sharing of business and business related transaction and/or business control
information.

Detailed Description Text (5):
The method and system of this invention provides for immediately updated business
transaction control information pursuant to received shipment information,
electronic invoice receipt information, price update information, and claim
adjustment information (interchangeably referred to as exception data) that is
located at the distributor location. Both the transaction generator and the
business controller preferably include computers. The computers include a set of
instructions or commands defining the method for processing the above-mentioned
information. Under certain system applications, the computer programs resident both
in the transaction generator and business controller may be identical, with either
the transaction generator or controller acting as the control and information
sharing center for the system. The business information may be electronically
communicated between the receiver computer and transaction generator, between the
transaction generator and the business controller, or between the manufacture
computer and business controller via varying electronic communication means.

Detailed Description Text (6):
The system provides a method that enables distributor purchase orders (i.e., any
orders for inventory or other goods), order acknowledgments, advanced shipping
notices, orders in transit, receipt acknowledgments, invoices, price discrepancy
claims and quantity disputes, overage/shortage claims, payment acknowledgments,
debit/credit adjustments, damaged goods claims, or any information related thereto,
to be represented electronically and to be electronically processed. The processed
information may then be monitored (or shared) by both the provider and receiver of
goods without the traditional use of paper forms and the time lag inherent in human
processing.

Detailed Description Text (7):
The invention is particularly adept at electronically and automatically
implementing many of the labor intensive traditional business operations.
Communication between a manufacturer and the manufacturer's distributors is
essential not only for placement and coordination of shipping orders, but for

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determining real inventory levels in an effort to reduce inventory cost. Further, the method and system of this invention automates the process for determining expected shipping times, delivery dates and timely resolution of claims resulting from discrepancies between an order placed and a order received. System performance includes the relatively immediate electronic posting of pertinent business information at a shared facility referred to herein as a control process point (e.g., transaction generator or business controller) enabling businesses to benefit from a marked increase in communication ability.

Detailed Description Text (12):
Operation of the invention schematically defined by FIG. 1 and described above is as follows. The distributor computer 130 prepares and transmits electronic business transaction activity information (electronic information) to the business controller 120 via electronic data link 140 (referred to as the information collection phase). The electronic information may contain information relating to inventory levels of products in the warehouse, or claim information relating to a receipt of damaged goods, overage or shortage of goods, and most other business transaction information.

Detailed Description Text (16):
In a more detailed example of this process, the distributor's computer 130 may transmit inventory level activity to a business control computer 120. The information would be processed and an order created by the business controller 120, sending notification to both the manufacturer and receiver computers. Upon processing the order and shipping it to the receiver, the manufacturer computer 110 sends shipping activity information to the business controller which responds by generating an Advanced Shipment Advisory and electronically transmits the Advisory to both the manufacturer and distributor computers.

Detailed Description Text (21):
A block of memory resident in and equally accessible to each of the business controller 120 and the transaction generator 210 maintain a number of data files and/or databases. The files may include product information, pricing and quantity information, shipping information, inventory information, receipt and invoice information, inventory model information, performance history information, a structure of personnel that performs various functions of the system etc., as well as the set of computer coded instructions defining the system (i.e., the object code). While the databases that are local to both the business controller 120 and the transaction generator 210 and are not mutually exclusive, they do contain database information which may only be changed (updatable) by the business controller or transaction generator.

Detailed Description Text (24):
The A-designated databases are updatable only by the business controller 120 (or manufacturer computer in the embodiment of FIG. 1) located at the manufacturer location. The shipment file 310, the invoice file 312, the order history file 314, the manufacturer claims file 318, the location file 316, the price resolution file 320 and the back order file 322. The A-designated databases may be accessed by the entire system. The business controller 120 and transaction generator 210 may be interfaced via electronic communication link 140. The B-designated databases, i.e., receipts file 330, the customer claims file 332, and the price disputes file 334, are updatable by the transaction generator 210 itself, and/or the receiver network computer 130 but accessible by the entire system.

Detailed Description Text (28):
In a more detailed example of this process, the distributor's computer 130 may transmit inventory level activity to the transaction generator 210, which in turn relays the information electronically to the business controller 120. The information may be processed at the business controller and an order may be generated thereat in the form of a notification sent to the transaction generator

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210. In response, the transaction generator creates a business transaction and sends the transaction information to both the receiver (distributor) computer 130 and the manufacturer computer 110 via the business controller 120.

Detailed Description Text (32):
FIG. 4 is a schematic flow diagram depicting a method of operation of one embodiment of the electronic system of this invention. The method provides for automatic control and adjustment of billing and _inventory_ information in accordance with stored electronic information relating to a business transaction (information collection phase). Both a manufacturer and distributor may thereby access the electronic information and track all shipment progress, responding automatically to any status changes. Put another way, all business control and transaction information is available in a shared database accessible by both the provider and receiver of goods.

Detailed Description Text (39):
Block 520 represents the step of _updating_ electronics claims _data_ according to the processed electronic claims information (business transaction phase). If acceptable to the system defined criteria, the _updated_ electronic claims _data_ are then incorporated within the electronic information available to the system.

Detailed Description Text (41):
Block 550 includes the step of receiving and processing an electronic acknowledgment provided by the receiver network computer 130. The electronic acknowledgement is generated in response to the updated shipping notice transmitted to the receiver network computer. Block 560 represents the step of generating an electronic receipt update according to the electronic acknowledgement. The electronic receipt update data is also incorporated into the appropriate database and made available to both the receiver and manufacturer computers.

Detailed Description Text (42):
Block 570 represents the step of receiving and processing electronic pricing information (in the form of price _update data_) transmitted by the manufacturer computer 110 via the business controller 120. The price _update data_ may then be incorporated into the appropriate database and made available to both the manufacturer and distributor computers. Block 580 represents the step of generating the price update (business transaction) information to be sent to both the manufacturer computer 110 and the receiver computer 130. This process assures that price remains synchronized between the manufacturer and the distributor.

Current US Cross Reference Classification (1):
705/1

CLAIMS:

1. A method for automatically controlling and tracking inventory level activity between a manufacturer and a distributor, comprising the steps of:

a) providing

i) a manufacturer computer located at a manufacturer location capable of exchanging business transaction information;

ii) a distributor computer located at a destination for said manufacturer's goods, said distributor computer capable of exchanging business transaction information;

iii) a business controller in electrical communication with said manufacturer computer and said distributor computer; and

iv) a transaction generator in electrical communication with said distributor

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computer and said business controller;

b) transmitting <u>inventory</u> level activity information from said distributor computer to said transaction generator and thereafter to said business controller;

c) processing of said information by said business controller to generate an order and thereafter transmitting a notification to said transaction generator;

d) transmitting of a business transaction by said transaction generator to both said distributor and manufacturer computers;

e) transmitting shipping activity information by said manufacturer computer to said transaction generator following processing and shipping of goods to said distributor;

f) transmitting an advanced shipment advisory by said transaction generator to both said distributor and manufacturer computers;

g) transmitting receipt activity information by said distributor computer to said transaction generator following receipt of said goods; and

h) transmitting receipt acknowledgment and billing effect transactions by said transaction generator to both said distributor and manufacturer computers.

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L3: Entry 1 of 1   File: USPT   Apr 14, 1998

DOCUMENT-IDENTIFIER: US 5739512 A
TITLE: Digital delivery of receipts

Brief Summary Text (17):
The invention is directed to apparatus for handling purchase transactions,
including a cash register and a card reader for reading cards which include at
least one electronic mail address. When the cash register generates a receipt, a
transmitter sends an electronic copy of the receipt to the electronic mail address.
The electronic copy may be digitally signed by either the vendor, the customer or
both before sending it to the electronic mail address. A customer's smart card may
receive a copy of the digital receipt, process the digital signature and then
return the signed receipt to the cash register for sending of the electronic
receipts. The electronic receipt may be sent to the customer as well as to whomever
prepares his or her travel vouchers. The electronic copy of the receipt may be in
an electronic data interchange format.

Brief Summary Text (18):
The invention is also directed to apparatus for handling purchase transactions,
including a cash register, and a card reader/writer for reading cards and
activating the cash register to generate a receipt and for writing an electronic
copy of the receipt to the card.

Brief Summary Text (20):
The invention is also directed to a method of processing purchase transactions, by
capturing an electronic mail address when processing a payment card, generating a
receipt, and sending a copy of the receipt to the electronic mail address.

Brief Summary Text (21):
The invention is also directed to a method of processing purchase transactions, by
accumulating copies of electronic receipts on a portable memory medium, and
processing information contained in the copies to produce a report summarizing at
least some of the receipts.

Brief Summary Text (22):
The invention is also directed to a system for processing purchase transactions,
including, a network and a plurality of merchant terminals connected to the
network. At least one of the merchant terminals is configured to include a
cardreader for reading payment information and an electronic mail address from a
card and for sending receipt information to the electronic mail address. A
plurality of customer terminals are also connected to the network. At least one of
these is configured to retrieve receipt information from an electronic mail box
having the electronic mail address and to process receipt information into a report
summarizing purchase transactions.

Brief Summary Text (23):
The inventions is also directed to a method of processing purchase transactions, by
receiving information about purchase transactions of a customer from at least one
merchant at a central location, and by sending an electronic confirmation of the

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purchase transaction to the customer at an electronic mail address stored at the central location.

Brief Summary Text (24):
The invention is also directed to a system for processing purchase transactions including a network and a central computer, containing information about accounts of a plurality of customers and about electronic mail addresses of each customer, connected to the network. A plurality of merchant terminals are connected to the network for sending information about purchase transactions of the customers to the central computer. The central computer is configured to send an electronic receipt containing information about a purchase transaction to a customer at a respective electronic mail address of the customer.

Detailed Description Text (13):
FIG. 3 illustrates the concept of Electronic Data Interchange (EDI). EDI is a method of transferring highly structured data automatically between disparate computer systems (300 and 301). By placing commercially available EDI software (320) as middleware between the computer and the incoming/outgoing data, it is possible to map the data contained within an EDI message to/from a company's internal databases. As long as both companies have agreed in advance on which EDI transaction sets (message structures) they intend to use, and have agreed what each data element means, it is possible for the computers to send and receive messages without human intervention. In the Figure, Company A's computer has sent a Purchase Order (330) to Company B's computer. Company B's computer has determined that the order can be fulfilled and has responded by sending an acknowledgment (340) to Company A's computer. Automated bank card authorizations are accomplished in the same manner and methodology is suitable for the generation, transmission and acknowledgment of electronic receipts.

Detailed Description Text (15):
In the text of the message, a plurality of items of information are arranged in a predefined order. These include, in the example given, vendor name, vendor address, vendor tax ID, date, time, receipt number, number in party, bill amount, tax amount, total amount paid, how paid, a digital signature of the vendor and an optional digital signature of the customer. This format could be extended to include an itemization of each item purchased or each service rendered in a variable length field.

CLAIMS:

1. Apparatus for handling purchase transactions, comprising:

a. a cash register;

b. a card reader for reading cards including at least one electronic mail address and activating said cash register to generate a receipt; and

c. a transmitter for sending an electronic copy of said receipt to said electronic mail address.

7. A method of processing purchase transactions, comprising the steps of:

a. providing an element for performing the step of capturing an electronic mail address when processing a payment card;

b. providing an element for performing the step of generating a receipt; and

c. providing an element for performing the step of sending a copy of said receipt to said electronic mail address.

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8. A system for processing purchase transactions, comprising:

a. a network;

b. a plurality of merchant terminals connected to said network, at least one of said terminals configured to include a cardreader for reading payment information and an electronic mail address from a card and for sending receipt information to the electronic mail address; and

c. a plurality of customer terminals connected to said network, at least one of which is configured to retrieve receipt information from an electronic mail box having said electronic mail address and to process receipt information into a report summarizing purchase transactions.

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   L4: Entry 2 of 2   File: USPT   Jan 21, 1997

US-PAT-NO: 5595264
DOCUMENT-IDENTIFIER: US 5595264 A

TITLE: System and method for automated shopping

DATE-ISSUED: January 21, 1997

INVENTOR-INFORMATION:
NAME   CITY   STATE   ZIP CODE   COUNTRY
Trotta, Jr.; Frank P.   Greenwich   CT   06830

APPL-NO: 08/ 294016   [PALM]
DATE FILED: August 23, 1994

INT-CL: [06] A47 F 9/04

US-CL-ISSUED: 186/56; 186/61, 235/383
US-CL-CURRENT: 186/56; 186/61, 235/383

FIELD-OF-SEARCH: 186/52, 186/55, 186/56, 186/61, 235/381, 235/383, 235/472

PRIOR-ART-DISCLOSED:

                        U.S. PATENT DOCUMENTS

            Search Selected   Search ALL   Clear

       PAT-NO   ISSUE-DATE   PATENTEE-NAME   US-CL
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☐   3716697   February 1973   Weir
☐   3737631   June 1973   Harris
☐   3746130   July 1973   Bullas
☐   3836755   September 1974   Ehrat
☐   3920100   November 1975   Dunphy
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☐	5408077	April 1995	Campo et al.	235/383 X
☐	5468942	November 1995	Oosterveen et al.	186/52 X

ART-UNIT: 317

PRIMARY-EXAMINER: Bartuska; F. J.

ATTY-AGENT-FIRM: Banner & Witcoff, Ltd.

ABSTRACT:

A system and method of automated shopping, including a portable bar code scanner for scanning bar code indicia information on items selected to be purchased, securing the scanner in a holder for limited access, and releasing the portable bar code scanner upon receiving an authorized payment card. A plurality of items for purchase are displayed in a store such that a customer can select an item to be purchased from the store display. The customer scans the bar code indicia on the selected item from the store display. The payment card is debited for the purchase price of the selected item and then returned to the customer.

13 Claims, 5 Drawing figures

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    L4: Entry 1 of 2   File: USPT   Mar 7, 2000

US-PAT-NO: 6032857
DOCUMENT-IDENTIFIER: US 6032857 A

TITLE: Electronic money system

DATE-ISSUED: March 7, 2000

INVENTOR-INFORMATION:
NAME   CITY   STATE   ZIP CODE   COUNTRY
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Miyamoto; Yo   Fuchu   JP
Furuta; Jun   Kokubunji   JP
Takano; Masaki   Musashino   JP
Matsubara; Takashi   Kodaira   JP
Ohsawa; Takao   Niiza   JP

ASSIGNEE-INFORMATION:
NAME   CITY   STATE   ZIP CODE   COUNTRY   TYPE CODE
Hitachi, Ltd.   Tokyo   JP   03

APPL-NO: 08/ 807630   [PALM]
DATE FILED: February 27, 1997

FOREIGN-APPL-PRIORITY-DATA:
COUNTRY   APPL-NO   APPL-DATE
JP   8-042792   February 29, 1996

INT-CL: [07] G06 F 17/60

US-CL-ISSUED: 235/379; 902/24
US-CL-CURRENT: 235/379; 902/24

FIELD-OF-SEARCH: 235/379, 235/380

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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       PAT-NO   ISSUE-DATE   PATENTEE-NAME   US-CL
  ☐   5453601   September 1995   Rosen   235/379

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ART-UNIT: 286

PRIMARY-EXAMINER: Pitts; Harold I.

ATTY-AGENT-FIRM: Beall Law Offices

ABSTRACT:

An electronic money system has an IC card for electronic money having a memory for
maintaining money deposit and money debit information and another memory, such as
an EPROM, for storing transaction data, including detailed information of
transactions, such as the content of a typical receipt received from a retail
store. The transaction information can be used at a later time in a personal
computer so that an electronic record of household expenses can be maintained The
transaction data that is stored includes the product name, price of the product,
quantity of the product purchased and similar details of the transaction. The IC
card memory can record the name and telephone number of a retail store where the
card has been used or a network address can be recorded in the memory for use by a
customer to access electronic direct-mail information by using a PC. Also, a store
can determine whether a particular purchase is within a range of average purchases
in terms of the number of products being purchased in a transaction and the total
cost of the transaction, based on the stored transaction information.

9 Claims, 10 Drawing figures

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L5: Entry 1 of 1   File: USPT   Jan 21, 1997

DOCUMENT-IDENTIFIER: US 5595264 A
TITLE: System and method for automated shopping

Brief Summary Text (12):
In a preferred embodiment, the scanner is released from its holder to a customer
after an authorized credit card, debit card or like payment medium is accepted. The
customer then proceeds to shop along the aisles of the retail store and scans the
bar code indicia on the desired items. When the customer pushes a button on the
scanner to confirm the purchase of a scanned item, the indicia code information is
transmitted to an in-store computer. The computer performs the functions of adding
the purchased item to the customer's total bill and receipt, debiting the item from
the customer's payment card for the price of each item as it is scanned, adjusting
the inventory total within the store, and transmitting the information to an
inventory retrieval system. The inventory retrieval system then collects each item
which the customer purchases and places it into a box or bag for pickup by the
customer when the shopping is completed. Thus, when the customer has completed
their shopping, they merely return the scanner to its holder and receive in
exchange the return of their credit card, a receipt showing the total amount
debited thereto for the selected items, and the appropriate bag or box number or
code which will contain the purchased items. In an alternative preferred embodiment
of the invention, the payment or credit card is used for identification of the
customer while they are shopping. Thus, when the selected items are scanned, the
in-store computer merely records the purchase to the customer's account and the
receipt. Then, once the customer has finished shopping and returned the scanner to
its holder, the customer pushes a button on the scanner to confirm the final
purchase of the scanned items and the computer debits the total purchase to the
customer's payment card.

Detailed Description Text (5):
According to the present invention and referring again to FIG. 1, the store or
supermarket 30 is merely a showroom with a sample or two of each product displayed
on a plurality of shelves 32. An empty box prototype could even be used instead,
since the customer could still read the ingredients on the box and see, for
example, the calorie and fat contents thereof. If empty prototypes are used, the
store could eliminate refrigeration cases, shelf-life or freshness problems, and
shoplifting problems. In addition, since the store need only display one or two of
an item rather than thirty or forty of each item as is presently done, the shelf
space within the store increases dramatically. Further, in a preferred embodiment,
the warehouse or inventory stocking area is located on a separate floor or
downstairs from the display area where customers shop. Thus, the usable floor space
of current stand-alone stores is doubled. In prior art supermarkets and other such
stores, two-stories cannot easily be used because of the shopping carts. However,
in the present invention, the stores can double or even triple their capacity by
building the display showroom on an upper level floor.

Detailed Description Text (7):
Meanwhile, when the green button is depressed to confirm the purchase of the
scanned item the transaction is then encoded according to well-known manner, the

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scanner 14 transmits the purchase information to a central, in-store computer 20 using one of the above-mentioned wireless technologies. The in-store computer 20 performs several functions including (1) keeping a running total of the customer's purchases, (2) relaying the item selected for purchase to an inventory retrieval system 38, (3) adjusting the store's warehouse inventory to reflect the purchase of the item, and in one preferred embodiment, (4) debiting the customer's payment card 10 for the purchase price of the selected item. The inventory retrieval system 38 can be a fully automated system that dispatches the selected items by conveyor belt 34 into a box 36 or bag designated for each customer, i.e. box #101, or alternatively, the inventory can be retrieved manually and the customer's order bagged or boxed by hand.

Detailed Description Text (9):
At this point, the inventory retrieval system 38 has already collected the selected items for the customer and placed them in the box or bags 36 identified specifically for the customer by the number or code. Therefore, the customer returns to the scanner terminal 18 and replaces the scanner 14 in the holder 16 from which he originally removed it. Thereafter, the customer's payment card 10 is released for return to the customer and a receipt of the total purchases is printed for the customer and, preferably, includes the box or bag number identified for the customer. Thus, the customer proceeds to the store exit where the collected items in specified boxes are placed and hands the receipt to a clerk and receives his box of groceries or other selected items, i.e., box #101.

Detailed Description Text (13):
The advantages of the present invention are numerous. There is no waiting in line to check out, bag the groceries, or pay for the selected items. The "ringing" out for the selected items is done at the point of display. The bagging and collection of the items is done in the store warehouse either automatically or manually. Thus, the delays for the customer are virtually eliminated. For the retail establishment, the advantages include no cashiers, no restocking of shelves, no shopping carts at $300 apiece, and no shoplifting since the sample packages can actually be empty boxes. The retail establishment can also save on energy costs by having a larger, more efficient, single refrigeration unit in the inventory warehouse, rather than several small refrigeration cases which customers open and close the doors to every few seconds. In addition, the change in an item's price need be made only once in the in-store computer 20, rather than on each item on the shelf. The scanner display 22 will show the current price listed in the in-store computer, thus complying with state unit pricing and item pricing laws.

CLAIMS:

3. The method of claim 1 further comprising:

transmitting the bar code indicia information from the portable bar code scanner means to a terminal means;

recording the purchase price of the selected item on a receipt and transmitting the selection of the selected item to an inventory retrieval system.

9. The method of claim 3 wherein the inventory retrieval system retrieves the selected item from inventory and conveys the selected item to a designated pickup location.

10. A system for automated shopping comprising:

portable bar code scanner means for scanning the bar code indicia information on selected items, the bar code indicia indicating at least a purchase price for each selected item;

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holder means for securing said scanner means within said holder means;

release means for releasing said scanner means from said holder means upon acceptance of a payment medium, said release means retaining the payment medium, until the return of said scanner means thereto;

microprocessor means for processing information received from said scanner means;

transceiver means for communicating information between said microprocessor means and a control means for the automated shopping system via wireless transmission;

control means for receiving from said transceiver means the bar code indicia information scanned by said scanner means and debiting the payment medium for the purchase price of the selected items;

an inventory retrieval means for retrieving and accumulating the selected items from inventory, said control means transmitting the items to be retrieved to said inventory retrieval means;

wherein said release means returns the payment medium after return of said scanner means to said holder means.

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L7: Entry 1 of 2   File: USPT   Apr 14, 1998

DOCUMENT-IDENTIFIER: US 5739512 A
TITLE: Digital delivery of receipts

Detailed Description Text (7):
FIG. 1 is a function illustration of a first form of implementing the invention. In
a commercial transaction, once payment has been made, a receipt is generated. The
information contained in the receipt typically varies from vendor to vendor as does
the format of the information. Generation of a receipt is represented at 100. Note
that payment can occur by any known means such as credit cards, debit cards, cash,
check, electronic transfer or the like. A card reader is symbolically illustrated
at 110. The card reader would scan a card of some type having stored thereon an
electronic mail address for the delivery of receipts. The card itself could be a
traditional credit card, a smart card, a magnetically encoded driver's license or
any other computer readable card medium, the information on which has been
supplemented to include an E-mail address for delivery of electronic receipts. An
E-mail generator 120 assembles the information from the receipt generator and the
card reader into an E-mail message suitable for transmission across a network 140.
Network 140 can be a proprietary network or an open network such as the Internet.
Item 130 indicates that optional digital signatures are generated and applied to
the receipt information. Typically, this could be a digital signature of a vendor,
by which the authenticity of the receipt would be assured for purposes of official
agencies of the government as well as for the company for whom the traveler works.
A digital signature of the customer may be applied as well to insure a credit card
company that the receipt is authentic. The application of digital signatures as a
mechanism for insuring authenticity of a document and that the document has not
been changed using public key encryption techniques is well known in the art.

Detailed Description Text (13):
FIG. 3 illustrates the concept of Electronic Data Interchange (EDI). EDI is a
method of transferring highly structured data automatically between disparate
computer systems (300 and 301). By placing commercially available EDI software
(320) as middleware between the computer and the incoming/outgoing data, it is
possible to map the data contained within an EDI message to/from a company's
internal databases. As long as both companies have agreed in advance on which EDI
transaction sets (message structures) they intend to use, and have agreed what each
data element means, it is possible for the computers to send and receive messages
without human intervention. In the Figure, Company A's computer has sent a Purchase
Order (330) to Company B's computer. Company B's computer has determined that the
order can be fulfilled and has responded by sending an acknowledgment (340) to
Company A's computer. Automated bank card authorizations are accomplished in the
same manner and methodology is suitable for the generation, transmission and
acknowledgment of electronic receipts.

Detailed Description Text (17):
FIG. 5 provides a process flowchart for the scenario illustrated in FIG. 1. The
traveler gives his credit card to the cashier to settle his bill (500). The cashier
swipes the card through the credit card reader (510) which, in turn, generates an
EDI message to the credit card authorization system requesting authorization for a
specific dollar amount (520). The credit card company responds with an EDI message
(530). If the response states that the charge is not authorized (540) then the

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transaction is halted (530). However, if the response states that the charge is <u>authorized</u> (540) then a digital <u>receipt</u> is generated and digitally signed and optionally encrypted by a computing device (550) and then delivered to the traveler's electronic address as e-mail (560) for later retrieval.

<u>Detailed Description Text</u> (22):
FIG. 8 is a flowchart of a process of a third embodiment in which the credit card company issues the electronic receipt. The traveler gives his credit card to the cashier to settle his bill (800). The cashier swipes the card through the credit card reader (810) which, in turn, generates an EDI message to the credit card <u>authorization</u> system requesting <u>authorization</u> for a specific dollar amount and an EDI message which contains the <u>receipt</u> in digital form (830). The credit card company responds with an EDI message (830). If the response states that the charge is not authorized (830) then the transaction is halted (870). However, if the response states that the charge is <u>authorized</u> (840) then the credit card company stores the <u>receipt</u> information in a database and a digital <u>receipt</u> is generated, optionally encrypted, optionally digitally signed by the credit card company and/or the customer (850) and sent to the traveler's electronic address as e-mail (860) for later retrieval.

Generate Collection   Print

L16: Entry 1 of 1   File: USPT   Apr 14, 1998

DOCUMENT-IDENTIFIER: US 5739512 A
TITLE: Digital delivery of receipts

Brief Summary Text (11):
Encryption techniques permit the secure transmission of electronic information.
Well-known public/private key encryption schemes provides privacy and content
security, while digital signature schemes provide for authentication of the sender.
These techniques are well-understood and widely used in many applications,
including electronic mail and EDI.

Brief Summary Text (17):
The invention is directed to apparatus for handling purchase transactions,
including a cash register and a card reader for reading cards which include at
least one electronic mail address. When the cash register generates a receipt, a
transmitter sends an electronic copy of the receipt to the electronic mail address.
The electronic copy may be digitally signed by either the vendor, the customer or
both before sending it to the electronic mail address. A customer's smart card may
receive a copy of the digital receipt, process the digital signature and then
return the signed receipt to the cash register for sending of the electronic
receipts. The electronic receipt may be sent to the customer as well as to whomever
prepares his or her travel vouchers. The electronic copy of the receipt may be in
an electronic data interchange format.

Detailed Description Text (7):
FIG. 1 is a function illustration of a first form of implementing the invention. In
a commercial transaction, once payment has been made, a receipt is generated. The
information contained in the receipt typically varies from vendor to vendor as does
the format of the information. Generation of a receipt is represented at 100. Note
that payment can occur by any known means such as credit cards, debit cards, cash,
check, electronic transfer or the like. A card reader is symbolically illustrated
at 110. The card reader would scan a card of some type having stored thereon an
electronic mail address for the delivery of receipts. The card itself could be a
traditional credit card, a smart card, a magnetically encoded driver's license or
any other computer readable card medium, the information on which has been
supplemented to include an E-mail address for delivery of electronic receipts. An
E-mail generator 120 assembles the information from the receipt generator and the
card reader into an E-mail message suitable for transmission across a network 140.
Network 140 can be a proprietary network or an open network such as the Internet.
Item 130 indicates that optional digital signatures are generated and applied to
the receipt information. Typically, this could be a digital signature of a vendor,
by which the authenticity of the receipt would be assured for purposes of official
agencies of the government as well as for the company for whom the traveler works.
A digital signature of the customer may be applied as well to insure a credit card
company that the receipt is authentic. The application of digital signatures as a
mechanism for insuring authenticity of a document and that the document has not
been changed using public key encryption techniques is well known in the art.

Detailed Description Text (15):

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In the text of the message, a plurality of items of information are arranged in a predefined order. These include, in the example given, vendor name, vendor address, vendor tax ID, date, time, receipt number, number in party, bill amount, tax amount, total amount paid, how paid, a <u>digital signature</u> of the vendor and an optional <u>digital signature</u> of the customer. This format could be extended to include an itemization of each item purchased or each service rendered in a variable length field.

CLAIMS:

2. The apparatus of claim 1 in which said transmitter sends said electronic copy of the receipt to said card for <u>digital signature</u> prior to sending said receipt to said electronic mail address.

3. The apparatus of claim 1 in which said transmitter sends said electronic copy of the receipt to said cash register for <u>digital signature</u> prior to sending said receipt to said electronic mail address.

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L17: Entry 1 of 1   File: USPT   Apr 14, 1998

DOCUMENT-IDENTIFIER: US 5739512 A
TITLE: Digital delivery of receipts

Brief Summary Text (11):
Encryption techniques permit the secure transmission of electronic information.
Well-known public/private key encryption schemes provides privacy and content
security, while digital signature schemes provide for authentication of the sender.
These techniques are well-understood and widely used in many applications,
including electronic mail and EDI.

Brief Summary Text (17):
The invention is directed to apparatus for handling purchase transactions,
including a cash register and a card reader for reading cards which include at
least one electronic mail address. When the cash register generates a receipt, a
transmitter sends an electronic copy of the receipt to the electronic mail address.
The electronic copy may be digitally signed by either the vendor, the customer or
both before sending it to the electronic mail address. A customer's smart card may
receive a copy of the digital receipt, process the digital signature and then
return the signed receipt to the cash register for sending of the electronic
receipts. The electronic receipt may be sent to the customer as well as to whomever
prepares his or her travel vouchers. The electronic copy of the receipt may be in
an electronic data interchange format.

Detailed Description Text (7):
FIG. 1 is a function illustration of a first form of implementing the invention. In
a commercial transaction, once payment has been made, a receipt is generated. The
information contained in the receipt typically varies from vendor to vendor as does
the format of the information. Generation of a receipt is represented at 100. Note
that payment can occur by any known means such as credit cards, debit cards, cash,
check, electronic transfer or the like. A card reader is symbolically illustrated
at 110. The card reader would scan a card of some type having stored thereon an
electronic mail address for the delivery of receipts. The card itself could be a
traditional credit card, a smart card, a magnetically encoded driver's license or
any other computer readable card medium, the information on which has been
supplemented to include an E-mail address for delivery of electronic receipts. An
E-mail generator 120 assembles the information from the receipt generator and the
card reader into an E-mail message suitable for transmission across a network 140.
Network 140 can be a proprietary network or an open network such as the Internet.
Item 130 indicates that optional digital signatures are generated and applied to
the receipt information. Typically, this could be a digital signature of a vendor,
by which the authenticity of the receipt would be assured for purposes of official
agencies of the government as well as for the company for whom the traveler works.
A digital signature of the customer may be applied as well to insure a credit card
company that the receipt is authentic. The application of digital signatures as a
mechanism for insuring authenticity of a document and that the document has not
been changed using public key encryption techniques is well known in the art.

Detailed Description Text (13):

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FIG. 3 illustrates the concept of Electronic Data Interchange (EDI). EDI is a method of transferring highly structured data automatically between disparate computer systems (300 and 301). By placing commercially available EDI software (320) as middleware between the computer and the incoming/outgoing data, it is possible to map the data contained within an EDI message to/from a company's internal databases. As long as both companies have agreed in advance on which EDI transaction sets (message structures) they intend to use, and have agreed what each data element means, it is possible for the computers to send and receive messages without human intervention. In the Figure, Company A's computer has sent a Purchase Order (330) to Company B's computer. Company B's computer has determined that the order can be fulfilled and has responded by sending an acknowledgment (340) to Company A's computer. Automated bank card <u>authorizations</u> are accomplished in the same manner and methodology is suitable for the generation, transmission and acknowledgment of electronic <u>receipts</u>.

Detailed Description Text (15):
In the text of the message, a plurality of items of information are arranged in a predefined order. These include, in the example given, vendor name, vendor address, vendor tax ID, date, time, receipt number, number in party, bill amount, tax amount, total amount paid, how paid, a <u>digital signature</u> of the vendor and an optional <u>digital signature</u> of the customer. This format could be extended to include an itemization of each item purchased or each service rendered in a variable length field.

Detailed Description Text (17):
FIG. 5 provides a process flowchart for the scenario illustrated in FIG. 1. The traveler gives his credit card to the cashier to settle his bill (500). The cashier swipes the card through the credit card reader (510) which, in turn, generates an EDI message to the credit card authorization system requesting authorization for a specific dollar amount (520). The credit card company responds with an EDI message (530). If the response states that the charge is not authorized (540) then the transaction is halted (530). However, if the response states that the charge is <u>authorized</u> (540) then a digital <u>receipt</u> is generated and digitally signed and optionally encrypted by a computing device (550) and then delivered to the traveler's electronic address as e-mail (560) for later retrieval.

Detailed Description Text (22):
FIG. 8 is a flowchart of a process of a third embodiment in which the credit card company issues the electronic receipt. The traveler gives his credit card to the cashier to settle his bill (800). The cashier swipes the card through the credit card reader (810) which, in turn, generates an EDI message to the credit card <u>authorization</u> system requesting <u>authorization</u> for a specific dollar amount and an EDI message which contains the <u>receipt</u> in digital form (830). The credit card company responds with an EDI message (830). If the response states that the charge is not authorized (830) then the transaction is halted (870). However, if the response states that the charge is <u>authorized</u> (840) then the credit card company stores the <u>receipt</u> information in a database and a digital <u>receipt</u> is generated, optionally encrypted, optionally digitally signed by the credit card company and/or the customer (850) and sent to the traveler's electronic address as e-mail (860) for later retrieval.

CLAIMS:

2. The apparatus of claim 1 in which said transmitter sends said electronic copy of the receipt to said card for <u>digital signature</u> prior to sending said receipt to said electronic mail address.

3. The apparatus of claim 1 in which said transmitter sends said electronic copy of the receipt to said cash register for <u>digital signature</u> prior to sending said receipt to said electronic mail address.

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h   e b   b g e e e f   c   e   e   ge

L5	L4 and inventor$	1	L5
L4	5595264.pn. or 6032857.pn.	2	L4
L3	L1 and purchas$	1	L3
L2	L1 and (inventor$)	0	L2
L1	5739512.pn.	1	L1

END OF SEARCH HISTORY

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

L17	L16 and ((validat$ or verif$ or authentic$ or authori$) with receipt$)	1	L17
L16	L1 and (digital$ with signature)	1	L16
L15	L14 and l6	0	L15
L14	L12 and l9	6	L14
L13	L12 and l10	0	L13
L12	L8 and (digital$ with signature)	21	L12
L11	L10 and ((validat$ or verif$ or authentic$ or authori$) with receipt$)	0	L11
L10	L9 and 705/?.ccls.	1	L10
L9	L8 and inventor$	9	L9
L8	((electronic adj receipt) or (e-receipt)) and ((updat$ or refresh$ or rewrit$) with (record$ or file or data)) and @ad<=19990610	33	L8
L7	L6 and ((validat$ or verif$ or authentic$ or authori$) with receipt$)	2	L7
L6	L4 or l1	3	L6

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h   e   b   b   cg   b   e   e   ch